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REMARKS

Claims 1-45 are currently pending in the subject application and are presently under consideration. Applicants' representative notes with appreciation the indication that the election with traverse of Group I (claims 1-31 and 43-45) filed May 24, 2005 was found persuasive and that the Examiner has therefore re-joined all claims for further prosecution on the merits. Claims 3-7, 10-11, 16-28, 30-31, 33-42 and 44-45 have been amended herein to correct minor informalities. Applicants' representative notes that the aforementioned amendments do not necessitate a new search or any undue effort by the Examiner as they do not present new claimed subject matter. Accordingly, entry and consideration of these amendments is respectfully requested. A version of all pending claims is provided at pages 2-8 of this Reply. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Objection to Claims 37 and 38

Claims 37 and 38 stand objected to for a minor informality. This objection should be withdrawn for at least the following reason. Claims 37 and 38 have been amended to cure the minor informality identified by the Examiner, and further contrary to the Examiner assertion the term "bf_{res}" is defined in the specification at page 21, lines 2-3 and page 21, lines 26-27. Accordingly, withdrawal of this rejection is requested.

II. Objection to Claims 17, 30 and 33

Claims 17, 30 and 33 stand objected because they depend on themselves. This rejection should be withdrawn for at least the following reason. Claims 17, 30 and 33 have been amended herein to cure the minor informality identified by the Examiner. Accordingly, the objection to the subject claims should be withdrawn.

III. Rejection of Claims 1-36 and 39-45 Under 35 U.S.C. § 103(a)

Claims 1-36 and 39-45 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bourgoin, *et al.* (US 5,804,709). This rejection should be withdrawn for at least the following reasons. Bourgoin, *et al.* fails to teach or suggest each and every aspect set forth in the subject claims.

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To reject claims in an application under §103, an examiner must establish a *prima facie* case of obviousness. A *prima facie* case of obviousness is established by a showing of three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) *must teach or suggest all the claim limitations*. See MPEP §706.02(j). The *teaching or suggestion to make the claimed combination* and the reasonable expectation of success *must be found in the prior art and not based on the Applicant's disclosure*. See *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). An examiner cannot establish obviousness by locating references which describe various aspects of a patent applicant's invention *without also providing evidence of the motivating force* which would impel one skilled in the art to do what the patent applicant has done. *Ex parte Levengod*, 28 USPQ2d 1300 (P.T.O.B.A.&I. 1993).

Applicants' claimed invention pertains to characterization of capacitance and resistance relating to interconnects within VLSI circuits, and in particular to non-contact in-line characterization of capacitance and resistance of VLSI circuit interconnects. To this end, independent claims 1, 29, 32 and 43 recite similar aspects, namely: *a plurality of micro-electro-mechanical system (MEMS) cantilevers that apply voltage(s) to VLSI circuit interconnect(s) without physical contact thereto*. Bourgoïn, *et al.* does not teach or suggest these novel features of the claimed invention.

Bourgoïn, *et al.* relates to means for measuring the forces and/or deflections of cantilever type elements as encountered in the field of Atomic Force Microscopy (AFM). The cited document further relates to a method and apparatus for determining material properties, and in particular to a dopant profiler based on a scanning probe microscope involving the generation and detection of higher harmonics of an applied electromagnetic field. The Examiner asserts that the cited document discloses the novel features of the invention as claimed within figures 2-4. Applicants' representative disagrees. Figures 2-4 disclose basic variants of Bourgoïn, *et al.*'s invention wherein a flexible cantilever with a tip at its apex and a sample holder with an associated sample are connected to a DC voltage source which provides a bias voltage across a

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gap separating the cantilever tip and the sample associated with the sample holder. The cantilever and its associated tip may either oscillate at its resonance frequency or at a frequency of an externally supplied signal. The gap separating the cantilever tip and the sample is then modulated causing the emission of radiation that includes fundamental ω and higher harmonic frequencies $n\omega$ signals that are subsequently received by an antenna and amplified for further processing. Applicants' claimed invention in contrast utilizes two or more micro-electro-mechanical (MEMS) cantilevers to receive voltages output by a voltage source. The received voltages are then applied to VLSI circuit interconnects without physical contact thereto. It is submitted, the distinction between the cited document and the invention as claimed lies in the fact that in the claimed invention a potential difference is applied between two or more micro-electro-mechanical cantilevers positioned proximate to VLSI circuit interconnects, whereas the cited document places the potential difference between the cantilever tip and the sample associated with the sample holder thereby causing emission of radiation in the form of fundamental ω and higher harmonic frequencies $n\omega$ signals.

The Examiner further concedes that Bourgoïn, *et al.* only discloses one MEMS cantilever, but nevertheless asserts that it "would have been obvious to one having ordinary skill in the art at the time the invention was made to provide additional MEMS since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art, *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8." (See Office Action dated August 11, 2005, page 3). Applicants' representative asserts that the Examiner is employing a 20/20 hindsight road map based analysis to impermissibly provide the missing teaching of the cited document. In essence, the Examiner is basing the rejection on an assertion that it would have been obvious to do something not suggested in the art based on the advantages disclosed in applicants' specification. This sort of rationale has been condemned by the Court of Appeal for the Federal Circuit as being sophistic. See *e.g. Panduit Corp. v. Dennison Manufacturing Co.*, 1 USPQ2d 1593 (Fed. Cir. 1987). Thus it is submitted, a *prima facie* case of obviousness has not been established against applicants' claimed invention. Further, the subject invention would not have been obvious to one ordinarily skilled in the art sufficient to impel him/her to do what the applicants have suggested, other than *via* employment of applicants' specification as a 20/20 hindsight-based road map to achieve the purported invention. Accordingly, withdrawal of this

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rejection with respect to independent claims 1, 29, 32 and 43 (and claims depending there from) is requested.

CONCLUSION

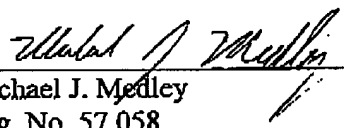
The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [SIPRP101US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,

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